Municipal Solid Waste Track Proceedings

Fourth National Tribal Conference on Environmental Management
May 19-21, 1998

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Reducing Casino Waste
Tuesday, May 19, 1998, 1:30 to 3:00 p.m., Tahiti Room

Agenda

1. Dr. Norman Richards, Mohegan Tribe (Moderator)
   Evaluating Waste Reduction Alternatives and Costs

2. Dee Allen, Lac du Flambeau Band of Lake Superior Chippewa Indians
   Overcoming Barriers to Implementing a Waste Reduction Program

3. Darrell Breuer, Prairie Island Indian Community
   Developing a Solid Waste Management and Recycling Program

Discussion

Elizabeth Cotsworth, Acting Director, Office of Solid Waste made opening remarks. She noted that the six solid waste sessions were evidence of OSW's focus and emphasis on tribal issues. Many tribes have participated in focus groups held by the National Tribal Environmental Council (NTEC) for OSW to identify tribes' needs, barriers, successes, and accomplishments. Ms. Cotsworth thanked those who participated in the focus groups for their openness, frankness, and input, which have allowed OSW to craft its National Municipal Solid Waste Strategy for Indian Country. The Strategy will help OSW direct increasing resources where the impact will be greatest.

OSW's focus under the Strategy will be in a few areas, the Acting Director said. These include:

- Education of tribal leaders and communities on the importance of sound solid waste management.

- Identification of potential funding sources besides EPA and how to effectively access such revenues.

- Supporting integrated solid waste management, not merely dump closure, and assisting development and implementation of such projects.

- Encouraging partnerships with other localities and communities to develop mutual solutions.

Ms. Cotsworth then described the six sessions of the solid waste track and stressed that the sessions would feature tribal leaders and people with hands-on tribal experience, not EPA speakers. She identified OSW and regional solid waste staff in the room and encouraged tribal solid waste professionals to interact with them at the conference and throughout the year.

Dolly Tong, EPA Region 5 Solid Waste Indian Coordinator, introduced Dr. Norman Richards.

Dr. Norman Richards, Mohegan Tribe of Connecticut, began by predicting that, although the casino waste reduction session's speakers are from three different tribes, participants would see commonality in what they recommend for casino waste reduction.

The Mohegan solid waste program started with a small pollution prevention (P2) grant from EPA. Dr. Richards said that when he first did calculations of potential for P2 at the planned Mohegan Sun casino, he was shocked to find the estimated potential savings were $2 million per year. After he recalculated in disbelief and found that the estimate was indeed valid, the tribal council immediately passed resolutions to start the P2 work. Dr. Richards said that now he cannot think of any program with more "bang for the buck" than P2. Large casinos like Mohegan Sun—which has 6,000 employees and receives more than 15,000 visitors daily—have high potential for P2 savings.

Dr. Richards explained that one of the best concepts devised by the Mohegan program is that of an integrated solid waste management (ISWM) team. The power of the team is in its multi-level participation. The team included the vice-chair of the tribal council, Mohegan Sun architects and engineers, casino division heads, and purchasing officials. Since it involved such a range of people, the team could invent multidisciplinary programs and approaches. One framework was a total cost analysis. In this vein, the team looked at all costs associated with any activity, including disposal, hauling, storage, and environmental risk. They easily translated the analysis into a P2 plan, which consisted of:

- *Contractor certification by Dr. Richards' office*. All contractors must take a two-hour course, understand codes and procedures, and pass a test before being awarded contracts. Dr. Richards explained that, although one might think contractors would react negatively to this requirement, on the contrary, many said they were glad they knew the tribe's expectations up front.

- *Training of employees*. As part of the orientation they received when hired, new workers see a slide show explaining tribal policy and expectations. This has been received well. Employees realize the importance of Native American culture from the start and feel pride in helping to work toward beliefs valued by it, such as environmental protection.

- *"Quality circles."* Employees can suggest better ways to do things. By visiting generators, sorters, and haulers of solid waste, planners can borrow their best ideas. Example: Cafeteria waste from employee free meals, outdated food, and cooking scraps are sent to an off-reservation piggery as feed, and the pig waste is made into compost, which is reimported onto the reservation to "close the loop." Compost is important for the casino since the area's soil is very sandy and needs much conditioning.

- *Use of video.* Dr. Richards shows employees a video of solid waste disposal at the off-reservation combustor to which the tribe's solid waste is sent. Employees apparently had a negative image of combustion, and realize that by reducing waste they can reduce use of combustion.

- *Mass balance monitoring*. This can be done well since incoming material is counted closely and inventoried on a computer. By then measuring outgoing materials, a mass balance is achieved. Example: The casino sells cooking grease to a rendering plant to be made into animal feed. By performing a mass balance, the tribe can easily figure the cost avoided by not sending this grease to the combustor.

- *Green purchasing*. The tribe trained the casino purchasing group by sending them to EPA workshops on green purchasing. The group now always looks for "green options," according to Dr. Richards. Contractors have cooperated, for example, by using and then reusing milk carton carrying crates made from recycled plastic.

Once the tribe "had a handle on" quantities and costs, it could then make a difference. They have succeeded at doing so, having reached the 97th percentile of Connecticut towns in recycling percentage. The casino is now fine-tuning its successful program. For example, garbage bags in the waste stream going to the combustor contained, on average, 4 pounds of liquid from ice cubes and leftover beverages. Through signs, notices, and articles, employees were reminded to empty containers before disposing of them. Due to the high volume of waste at the casino kitchen (trash cans fill up and are emptied every 15 minutes) and the high tipping fee at the combustor ($76 per ton), a 4-pound reduction in every bag results in considerable savings. Dr. Richards stated that the tribe is forced to use the regional combustor even though cheaper options are available, but that in one way, this is a positive factor, as the high cost serves as an incentive to reduce waste. The deposition of combustor ash on a parcel of land abutting surface water near the reservation also serves as a visual reminder that waste has an environmental cost and should be reduced.

In summary, Dr. Richards stated that one small grant has generated millions of dollars in savings. This has enabled the tribe to move on to more advanced research projects such as use of polylactic acid utensils and dishes, and vermiculture composting to grow worms as feed for a planned aquaculture project.

Dr. Richards then introduced Dee Allen.

Dee Allen, Lac du Flambeau Band of Lake Superior Chippewa Indians, took listeners back to 1996, when the tribe was planning its new casino. The old casino had a recycling program, but the need for a more effective program had become evident. Under an EPA grant, the tribe characterized waste, determined goals, identified methods, developed training, implemented waste reduction, put procedures in place to modify the program as needed, and promoted community involvement. They collected data, conducted surveys, took inventory, and solicited departmental input. Problems they encountered included the inability to obtain waste inventories. The disposal company supplied only "guesstimates" of volume and was generally troublesome. This tribal disposal company did not even follow tribal waste codes.

The tribe determined its goals: reduce waste at the source, buy recycled, get more durable equipment, educate people, and comply with tribal codes. It then needed to identify methods to meet these goals. These included: provide management with purchasing alternatives and reusing items in other tribal businesses. Ms. Allen stated that challenges arose. Casino personnel felt they could not switch suppliers or tell suppliers they could only ship bulk. Markets in northwest Wisconsin for recycled materials were "not there."

In the area of training, the tribe established one-on-one training which taught employees about waste issues and cost-effectiveness. Personnel attended university, state, and private training workshops. Problems included lack of supervisor involvement, insufficient team effort, high employee turnover, and ability to train only a few employees at a time. Ms. Allen said that additionally, tribal council members looked at the project as yet another onus in their jobs.

When it came to implementing the waste reduction program, all goals and objectives were initialized by each casino department. Goals also were implemented at other tribal businesses, which "did well" with them. Problems included the tendency of departments to act separately and to be short-sighted.

In the area of modifying the program, some goals that were not feasible were revised. In light of some political problems, the tribe had to reestablish a "strong backbone" of waste management basics. Problems included inventory and management troubles, unwillingness of purchasers to switch vendors, and hauler noncompliance with codes.

The tribe promoted community involvement through advertisements, newspaper articles, youth poster contests, and a display booth. Problems included lack of interest and awareness as well as a "why should we do this?" attitude.

Ms. Allen summarized the "Dos" and "Don'ts" of a program of this kind:

- Do develop or revise codes to be enforceable on not only businesses but also disposal companies.
- Do have a written contract or agreement between the casino and the hauler.
- Do enforce the code and the contract and train personnel to observe code and contract requirements.
- Do organize a recycling committee of employees from all departments; do keep management and employees informed of and involved with success of the program.
- Don't give up; her tribe's casino required 2 years of work but is now coming around to program success.

Ms. Allen concluded by noting the tribe's accomplishments, which include:

- a successful and effective program in place;
- a recycling committee that now "runs with it" and shows the tribal solid waste department what they're doing rather than *vice-versa*;
- obviation of enforcement by enthusiastic, voluntary adherence to code;
- development of a personnel program that is flexible even with high employee turnover;
- conception of a model plan to be used in other tribal businesses; and
- in 9 months, savings of about $6,000.

Dr. Richards noted that, as predicted, commonalities arose between the Mohegan and Lac du Flambeau cases, namely that a team approach is needed and that working with suppliers is important. He then introduced Darryl Breuer.

Darryl Breuer, Prairie Island Indian Community, looked back to the beginning of his work with the tribe's casino 5 years ago. He noted that when he started in the housekeeping department, all waste, including construction and demolition waste, went into one dumpster. He received little management support when he suggested considering a recycling program. Then in 1996, a committee convened consisting of himself, the housekeeping manager, and representatives from the food/beverage and bar departments. The committee generated figures of potential savings and solicited input from the hauler. The hauler was not helpful, which Mr. Breuer attributed to the hauler's $58 per ton interest in continued high waste generation. Then, the tribe switched to Waste Management, Inc. This hauler was helpful and offered many options.

The casino generated 64 tons of waste per month at that time. With the addition of a hotel, waste generation is now 146 tons per month. To handle the greater waste stream, the tribe obtained a cardboard baler, but when paper was included with the cardboard, it was scattered by wind. The tribe purchased a compactor as a replacement. It works well for cardboard and paper, which total 12 tons per month. The tribe retains 80 percent of the proceeds from compacted cardboard/paper, which drew $180 per ton when the tribe first began compacting. The material now fetches only $30 per ton, but Mr. Breuer pointed out that avoiding disposal is worthwhile at any price.

In 1996, when the switch to Waste Management took place, the bar department sent all glass to disposal. The tribe obtained bins and paid one employee to collect and sort brown, green, and clear glass. Sorted glass is worth $20 per ton, but Mr. Breuer said that labor costs were too high to make this worthwhile, plus this price was not paid if glass was poorly sorted. The casino now recycles glass unsorted, so that it must pay for hauling instead of receiving $20 per ton, but once again, Mr. Breuer indicated that the priority was to avoid disposal. He added that about 1 ton per month of metal cans and a small amount of plastic are recycled.

Like Dr. Richards, Mr. Breuer has noticed large amounts of liquid in the casino's waste. He plans to train employees to empty containers before disposing, but he pointed out that training will be difficult owing to high employee turnover. The tribe is now working with the hauler to assess the feasibility of a compactor that would press out liquid, which might pay for itself in reduced disposal costs.

Mr. Breuer concluded by discussing food waste. He said the tribe's isolated location makes it difficult to operate a program to donate this material as animal feed, with only local farmers available as a market. When a program was tried, local farmers at first participated, but soon became disenchanted. In addition, they did not always pick up on schedule, leading to odor problems when food waste remained in containers outside the casino longer than expected. The program has been discontinued while the tribe looks for a hauler that can reliably remove the waste on a regular schedule.

Audience Participation

Question: Have your tribes considered opening combustors and taking the ash to a safe disposal site?
Ms. Allen said her tribe does not promote combustion. They feel that it is unsafe and associate it with backyard burning, an area with which the tribe has problems.
Dr. Richards reiterated that ash from the off-reservation combustor used by his tribe is put in piles near to the reservation. Although that pile will eventually be closed, it has already made the tribe averse to combustion. Furthermore, the tribe pays for emission credits for airborne emissions emanating from vehicles visiting the casino; the additional credits needed for a combustor would raise emission credits costs prohibitively.
Mr. Breuer said that his tribe is satisfied with using the nearby Red Wing municipal waste combustor.

Question: There was a visible contrast between program implementation experiences. Dr. Richards' seemed easy and successful, while Ms. Allen's seemed harder. What accounts for the difference?
Dr. Richards noted that the Mohegans had the advantage of starting a program before their casino was developed. Also the tribal vice-chair, who was a member of the recycling team that met regularly, consistently asked for updates and was fully aware of success. Others on team thus knew they were accountable, encouraging them to work diligently and achieve results.
Ms. Allen said that it took a long time for her to get tribal council and casino management support; commitment was lacking before upper-level buy-in occurred.

Dr. Richards added that in the beginning, when only four people were on his staff, EPA's small P2 grant had a large impact. He reiterated that the cost savings potential discovered in the initial analysis was striking and served to galvanize people.

Question: Do any of your casinos promote a "green" image as a selling point?
Mr. Breuer stated that his casino markets it by posting signs saying "we recycle" and by displaying the casino logo on recycling bins. In addition, the casino helped with the Recycle America initiative, resulting in positive comments and good publicity. Employees now "get excited" when customers ask about recycling.
Dr. Richards indicated that his tribe does not actively market a "green" image but that local newspapers, in competing for reader attention, discovered the story and continue to scramble to be the first to write about new advances. The waste reduction program has received "enormous local press."
Ms Allen emphasized the internal tribal aspect of publicity over external marketing, saying that a "green" image is not advertised but that employees take home their waste reduction knowledge.
Dr. Richards noted that with or without publicity, everyone catches on to a successful program and it "gets into the culture." As an example, he said that the piggery to which his casino sends food waste has been able to expand due to the casino's inputs, and is working on the solar heating of its hog barn due to a spreading environmental commitment. The operator of the piggery, which is not owned by the tribe or located on the reservation, now feels like a team member and reports to the committee at least monthly.

Question: I also have a problem with reliable pickup of food waste by farmers. Furthermore, farmers legitimately licensed by the state to use food waste charge a fee, while unlicensed farmers do not [i.e., leading to the unappealing choice between cost savings and compliance with the law]. Have any of your tribes considered on-reservation composting of food waste to avoid these problems?
Dr. Richards said his tribe considered composting food waste, but chose to send food waste to the piggery and compost pig waste instead. The tribe is still exploring other options for the future.
Ms. Allen said her tribe has small compost programs at businesses and schools, and engages in vermicomposting under a Great Lakes Intertribal Council program. She indicated that the tribe should consider expanding composting to address food and "green waste."

Question: Do any of you have "templates" others could use or checklists we could follow?
Dr. Richards affirmed this approach by saying that of 260 Connecticut towns, his tribe talked to the ones with the best recycling records and worked with town recycling officials. In so doing, the tribe found that technologies to achieve many recycling goals were well known.
Ms. Allen said that her tribe obtained model recycling program information from EPA and modified it for their own needs. EPA WasteWise materials also were very helpful, she said. The EPA materials needed significant tailoring to casinos, but still served as a valid starting point. Ms. Allen offered to make her casino's program materials available to the questioner, who thought they would be especially applicable as he, like Ms. Allen, represented a small Wisconsin casino.
Mr. Breuer indicated that Waste Management has staff dedicated to helping customers set up programs and that his tribe had availed itself of that service. Waste Management did not expressly charge a fee for these services, but Mr. Breuer posited that the cost is built into Waste Management's tipping fees.
Dr. Richards added that EPA Region 1 has a "goldmine" of handouts on solid waste management and P2 in its library. By using these and reading other available literature, he said, a tribe could develop a P2 plan consisting of quantitative analytical forecasts based on accomplishments of others rather than on "pie in the sky" estimates.

Question: How do your tribes handle wastewater and sludge?
Ms. Allen said her tribe has its own lagoon treatment system and water and sewer department.
Mr. Breuer stated that his tribe has a wastewater treatment plant which, in the last year, had switched from lagoons to enclosed treatment. Sludge is hauled to local farmers and managed through land application.

Question: With the lagoon system, were there problems with oil and grease clogging sanitary sewer lines?
Mr. Breuer answered that 2 years ago, three 1500-gallon grease traps were sufficient. Now, the tribe has just installed two 3500-gallon grease traps. The wastewater treatment plant says the resulting water is satisfactorily free of grease. All nonkitchen water, which should not contain grease, is routed around the traps to minimize the need for added capacity.

Question: How do you address playing cards? My tribe donates some to elderly centers in New Mexico, but has so many that we must landfill the remainder [i.e., because wax coating makes them impossible to recycle or compost]. How about bingo paper?
Dr. Richards said that his polylactic acid research extends to playing cards. He hopes to develop such cards, which would be easily compostable.
Ms. Allen was unaware of a solution, saying that her casino also is looking for ways to address the issue.
Mr. Breuer indicated that, after cutting the corners off the cards to prevent unauthorized reintroduction to game tables, his casino leaves decks in hotel rooms, sells them in gift shops, and donates them to churches, scouts, and other charities. Because the nearby, large Minneapolis-St. Paul metropolitan area has enough charitable organizations to reuse all the casino's excess cards, the tribe has not needed to address cards as waste. Mr. Breuer added that in a study conducted at his casino, bingo paper was found to account for only 32 pounds per day of waste. Due to this small quantity and issues with ink contamination, this waste stream is not addressed separately.

Question from Tonya Barnett, EPA OSW: What types of employee training do you offer and how frequently?
Mr. Breuer replied that his operation publishes newsletters, conducts training "all the time," and addresses inappropriate waste management practices immediately upon encountering them. He said he explains the program to new housekeeping employees when they are hired, but that some employees understandably "only care about finishing their shift and aren't so interested." Mr. Breuer said it is helpful to have a few employees dedicated full-time to solid waste management [i.e., because being interested is expressly what they do on their shifts].
Dr. Richards said his staff presents a slide show about general waste management tasks during new employee orientation. Each employee is also told duties specific to his or her job, as each department has its own added responsibilities. Dr. Richards said that video surveillance is used in the casino (with advance notification of employees) to capture employees using inappropriate waste management procedures. Showing the tapes to the employees helped them to understand the problem and led to quick correction. The tribe also uses frequent newsletters and electronic bulletin boards, on which Dr. Richards tries to put waste management notices in between sports scores, notices of free travel, and other attention-grabbing programming.

Dr. Richards summarized the session by stressing the commonality of approaches. Money-saving P2 programs, he said, feature teamwork, education, planning, strong ordinances, monitoring, feedback and communication, and recognition for jobs well done.

Mr. Breuer then led a tour of the host casino's waste management operation.

Developing Partnerships for Municipal Solid Waste Management
Wednesday, May 20, 1998, 8:30 to 10:00 a.m., Capri Room

Agenda

1. Jerry Pardilla, National Tribal Environmental Council (Moderator)
   Working With Other Tribes to Promote Successful Solid Waste Management Programs

2. Calvin Murphy, Eastern Band of Cherokee Indians
   Evaluating Regional Solid Waste Management Solutions

3. Mia Sonneck, Nez Perce Tribe/Tribal Solid Waste Advisory Network
   Organizing With Other Local Tribes to Leverage Resources and Increase Visibility

4. Mike Puhuyesva, Hopi Tribe
   Defining Goals and Resolving Issues: How to Work With Potential Partners to Ensure Mutual Success

Discussion

Karen Rudek, EPA OSW Municipal Solid Waste Indian Program, introduced Jerry Pardilla.

Jerry Pardilla, NTEC, stated that the early focus of NTEC was on the Resource Conservation and Recovery Act (RCRA) and its apparent shortcomings, especially litigation. He then introduced Calvin Murphy.

Calvin Murphy, Eastern Band of Cherokee Indians, explained his tribe's situation in 1991. The tribe was then operating a landfill, and his division was suddenly given control of it during a meeting. He was charged with bringing the sanitation program into compliance. There were no records, no permits, and no knowledge of RCRA in the tribe. After a "quick lesson" on landfill regulations from EPA Region 4 personnel, Mr. Murphy went to the tribal committee to say that the tribe had to either meet applicable requirements or close the facility. In preparation for closing the facility, the tribe's planning department and Mr. Murphy's sanitation department decided to present the idea of partnership to boards of nearby counties. Over a period of several months, they worked out a memorandum of understanding (MOU) with two counties and two towns. Mr. Murphy said that the tribe published a booklet about this process, and offered to send copies to interested participants.

Committees were set up to implement the MOU; these met several times and traveled to Washington, DC several times. Mr. Murphy said that the tribe took the lead in addressing regulatory developments, because it learned of such developments before the other participants. This is because the federal government deals directly with tribes, whereas counties learn of federal regulatory developments secondhand from states. Each partner executed a solid waste study. The findings of the studies were:

- The tribe should close its landfill. The reservation is only 56,000 acres and the tribe did not wish to give up any of this valuable land for a new or expanded landfill. Furthermore, the tribe did not want to deal with the regulatory complexity of landfill operation.

- Swain County should close its landfill. The county soon did so.

- A transfer station should be built. Over 11 months, the tribe built the facility.

Mr. Murphy then discussed financial arrangements. In order to write an agreement for Swain County's use of the transfer station, the tribe had to set a tipping fee that would cover transfer station costs, operation and maintenance, transportation, the tipping fee for off-reservation landfilling of waste received at the transfer station, and "maybe even make a dollar or two." In deciding the fee, the tribe counted on charging the same tipping fee to tribal users as it did to the counties. The rate was set at $45 per ton ("fairly low in the South," according to Mr. Murphy) and is still $45 per ton today. Since then, another county 60 miles away and several private haulers have negotiated contracts to use the transfer station. The new county will pay about $250,000 per year in tipping fees. The tribe is making a small profit from the station. Mr. Murphy said the tribe now has enough background and experience that if any more counties want to partner, it will be easier to establish and implement agreements with them than it was with the first few.

Concerning transfer station operations, Mr. Murphy said waste stays on the floor for a maximum of 12 hours. Usually workers clear the floor every day. Scrap metal is removed and given free to a hauler. This generates no direct revenue, but reduces outgoing tipping fees to the off-reservation landfill. Yard waste is removed and chipped. Tires and cardboard are also removed, and revenue from the latter is small but "enough to be worth baling and recycling."

Mr. Murphy then described the tribe's composting program. The hauler charges a special fee for sludge, so the tribe composts sludge with chipped yard waste and additional purchased wood chips. Having heard that attracting a market by offering the compost free can backfire by causing resistance to a fee when one is finally levied, the tribe charged a $10 per ton fee for compost from the outset. There is now a waiting list for compost, so the sanitation department has put before the tribal utilities commission a proposal to raise the fee.

In November 1997, the tribe opened a casino. Six months before the opening, Mr. Murphy met with all levels of casino management to convince them they should recycle materials and compost food waste. A 15-page agreement to do so was signed just 2 days before the casino opened. With such short notice, the program started as a "seat of our pants" operation, Mr. Murphy said. It had some early logistical problems but is now composting 20 tons per month food of waste, recovering 3 bales per day of cardboard (5 bales per day on weekends) and separating all plastic. Office paper is not yet recycled. The area of North Carolina where the tribe is located drew 5 to 8 million tourists per year even before the casino opened, many of them in summer. Mr. Murphy said he is, therefore, bracing for increased volume and a strain on the program in coming months.

Mia Sonneck, Nez Perce Tribe/Tribal Solid Waste Advisory Network (TSWAN), opened her presentation by recalling the aphorism "cleanliness is next to Godliness," and noting that the tribes of TSWAN participate in the organization in order to promote the cleanliness of their reservations. Ms. Sonneck first presented a history of TSWAN. Its first meeting was organized by EPA Region 10's Al Latourette. At that meeting, three tribes (Colville, Coeur D'Alene, and Nez Perce) came together to discuss solid waste, air pollution, and pesticides.

During this time, Ms. Sonneck had trouble working in a state-oriented structure for solid waste, which was geared toward counties and cities. Her supervisor told her about NTEC. She attended an NTEC meeting and found that her tribe lagged behind others in solid waste management. To address this without the frustration of the state-oriented structure, Colville and Nez Perce decided to seek out other tribes and discuss tribal solid waste management. Nez Perce hosted a TSWAN meeting with several tribes, the Indian Health Service (IHS), and Mr. Latourette. The group now has 10 tribes, all from the inland Northwest. (Coastal tribes, Ms. Sonneck said, had more advanced solid waste management due to greater

interaction with the federal government, made possible by being near EPA Region 10 in Seattle or IHS in Portland.) The sole purpose of TSWAN is now solid waste management. The group's quarterly meetings do not address emergency response or hazardous waste. Tribes take turns hosting the meetings, and the four federal agencies (the Department of Housing and Urban Development (HUD), the Bureau of Indian Affairs (BIA), IHS, and EPA) that fund solid waste management in Indian Country are encouraged to send representatives. The BPA also attended to consider getting involved. [Ms. Sonneck gave only this abbreviation. This is probably the Bonneville Power Administration in Portland.]

At TSWAN meetings, Ms. Sonneck said the tribes agreed that the IHS Sanitary Deficiency Survey(SDS) list, which is use to prioritize IHS solid waste spending, wasn't meeting needs. Finding that "there *is* power in numbers," Ms. Sonneck said, the tribes have started projects of their own. These include:

- Warm Springs is building a landfill and updating the other tribes on issues encountered in its development. Warm Springs owns 99.8 percent of their land, so they do not face a jurisdictional "checkerboard" like that of the Yakima Reservation, where jurisdictional uncertainty led to protracted litigation with a case even coming before the U.S. Supreme Court.

- Colville and another tribe now have transfer stations. Shoshone-Bannock had three transfer stations but is closing them due to vandalism and misuse.

- Nez Perce has completed a solid waste management plan and code and is trying to get them approved.

- Kalispel is not active in solid waste management, but hopes to become active through TSWAN.

- Yakima is operating a collection service, but is in conflict with a city over jurisdiction. Spokane is also operating a collection and hauling service.

Ms. Sonneck closed by presenting slides of solid waste management challenges.

Mike Puhuyesva, Hopi Tribe, first presented background on his tribe. High unemployment (45 to 60 percent) induces people to leave the reservation to seek employment as far away as Phoenix, 400 miles from the reservation. This breaks up families, deprives the tribe of human capital, and causes tribal members to spend their income away from the reservation, contributing to its economic woes. To bring employment to the reservation, the tribe started a business through an EPA JTR grant. Planners began by looking at the waste stream to determine what could be diverted and investigating whom the tribe could partner with to sustain the project. They found no local market for recycled material, and recyclable quantities were too small for cost-efficient recovery. The tribe has only small recycling centers, gathering mostly aluminum. To encourage recycling, officials tried to inform the community through school programs and newspapers. They also set up a buy-back program (mainly for aluminum) at grocery stores and schools.

With limited on-reservation resources, the tribe looked for opportunities off reservation. One recycling planner who had worked in Colorado had a friend there with a garment production company. This contact helped find interested off-reservation parties. The tribe pursued options in the garment field because there had already been undergarment and hat factories near the reservation; although these had failed, experience there left some tribal members with garment production skills. These factories had been 60-70 miles from

population centers, so tribal members who had worked there had long commutes, robbing them of time for family and cultural activities. The planners of the JTR project wanted to make it possible for people to work at home on their own schedules so they had time left for cultural and traditional activities. Tribal members expressed interest in such an arrangement. A Colorado firm provided training, initial materials, and technical experts. Hopi workers started by making "gibbers"—small pouches to carry items such as coins, lighters, credit cards, etc.—which Mr. Puhuyesva indicated were on display in the conference exhibit hall. The firm sponsored the tribe to attend a show of recycled-content products in Utah. This led to offers from companies to buy large amounts of gibbers. The tribe "took it slow" and chose not to produce them in high volume. The tribe sent some workers to New York for training and also tried to recruit more workers in order to become self-sufficient.

Hearing of Eco-Spun™ fabric, the tribe looked into this product. They received initial funding from the Arizona Department of Commerce (ADC) "via EPA," Mr. Puhuyesva said, to begin work with Eco-Spun™. This seed money, plus the idea that outsiders were interested in "authentic Indian stuff" was the focal point of the project. A booth presented at a Sedona, Arizona outdoor event drew interest. Organizations approached the tribe to ask how they could help. The tribe partnered with Grand Canyon Trust, a nonprofit organization, and received 1 year's funding after the ADC money ran out. The Trust also did marketing and public relations for the tribe's products. After the tribe sent representatives to an Arizona recycling conference in Scottsdale, interest grew in how they had closed the loop by using recycled material to produce garments. Additional nonprofits offered support. The tribe is now working with First Nations Development Institute. "When you demonstrate ability," Mr. Puhuyesva said, "organizations come looking for you. You no longer have to go out and seek money with grant proposals; it comes in."

Mr. Puhuyesva said that the recycling planner leads the garment production organization. Government activities are kept to a minimum so that employees can work on an individual basis and focus on quality rather than quantity. The results have been good, so when the tribe was offered contracts, from as far away as Japan and Germany, to produce set amounts of garments in a set time frame, they demurred to prevent having "sweatshops." In addition to the first two production machines bought at the beginning of the project, the tribe now has five more. Planners are hoping to become consistently profitable and get more employees on board to create on-reservation opportunities for those who can't or won't work off-reservation.

Mr. Pardilla spoke briefly of NTEC's peer-matching program. He stressed how tribes often look at solid waste management as problem, but that in fact there are other ways to approach it, as other speakers said, for instance as a commodity that earns tipping fees; or as source of marketable goods (compost, "gibbers"); or as a way to address other problems like unemployment and lack of time for traditional activities. NTEC has looked at it from many perspectives. One is consideration of solid waste management as a priority, and how to elevate its priority with tribal councils who have many competing demands. It might work to confront councils with federal deadlines, regulatory requirements, and the possibility of citizen suits. Tribal solid waste advocates also must sometimes deal with program managers who also address other media and are overwhelmed. It is critical, Mr. Pardilla says, to make tribal program managers understand what other tribes are doing and what knowledge can be transferred. This goal was the genesis of NTEC's peer match program, which enables tribes to find other tribes that could share valuable information. The program tries to bring tribes together efficiently since travel funds are scarce. Tribal partnerships thus formed serve as forums to identify priorities, devise strategies, and formulate solutions.

Audience Participation

Question from Ms. Rudek: Ms. Sonneck, at a meeting in Spokane, Washington, mentioned that TSWAN tribes are sharing resources; for example, one tribe is accepting recyclables from the others. Is that still going on? If so, is it working?
Ms. Sonneck replied that Bonnie Burk of Umatilla has a proposal for intertribal recycling in the planning stages. Under that plan, all 10 TSWAN tribes would ship plastic recyclables to the Spokane tribe, whose reservation is near a plastics factory that could buy the material. The Umatilla tribe, located near a metal plant, would do the same with aluminum. (Ms. Sonneck introduced a member of the Spokane tribe in the audience.)

Question from Christine Mitchell, Grand Traverse Band of Ottawa and Chippewa Indians: NTEC's work is commendable, and the focus groups held in Minnesota were effective. Does NTEC plan to expand its focus to the Eastern part of the country?
Mr. Pardilla answered that NTEC is doing more to serve areas outside its original base in the West. The organization is now preparing another round of peer matching and is hoping to include Eastern tribes. NTEC, Mr. Pardilla said, matches tribes that have related interests, preferably those where the adviser and recipient tribes have "multiple matches" (e.g., the partnered tribes have a common interest in two or more areas, such as wastewater and recycling). The issue with expanding East is that climate and other conditions vary across the country, so NTEC must design peer matching to partner tribes addressing similar circumstances [implying that to expand East requires adviser tribes in East; when matching new recipient tribes from East with adviser tribes from West, differences in conditions might limit usefulness of adviser's expertise].

Question: When the Cherokee tribe began offering services, did any tribal members refuse them?
Mr. Murphy replied that in developing its landfill closure plan, the tribe surveyed reservation residents about their needs. "Would you support curbside recycling," "Would you participate," etc. The result was that "nobody" supported maintaining a landfill on the reservation, but respondents overwhelmingly supported recycling. Participation in the program is still voluntary, Mr. Murphy said, so there is no issue of residents "refusing" to participate, and the program is still growing every year. Mr. Murphy said his opinion is that reaching complete participation takes longer under this voluntary arrangement than under a mandatory program, but the results will be better. The tribe does not want to make participation mandatory because "people don't like that." He pointed out that instead, the tribe's recycling planner spends 80 percent of his time educating people.

Mr. Pardilla then closed the session.

Closing Open Dumps and Siting Alternative Facilities
Wednesday, May 20, 1998, 10:30 a.m. to 12:00 noon, Capri Room

Agenda

1. Keith Jones, White Mountain Apache Tribe Environmental Planner and Tribal Engineer
   Working With Multiple Funding Sources to Address Solid Waste Issues

2. Lee Roberts, Sioux/Laguna Pueblo native and Tribal Program Manager for Pollution Prevention, EPA Region 8 (Moderator)
   Making MSW Management Decisions

3. Bill Quinn, Attorney for the Salt River Pima-Maricopa Indian Community
   Seeking Flexibility Under the Federal MSWLF Liner Standards

4. (Kim Clausen, Oglala Sioux Tribe, unable to attend)

Discussion

Ms. Rudek welcomed participants and informed them that Lee Roberts will act as moderator in Kim Clausen's absence.

Lee Roberts, Sioux/Laguna Pueblo native and Tribal Program Manager for Pollution Prevention, EPA Region 8, started by summarizing his career and then discussing the regulatory situation. Solid waste is an "unfunded mandate" [from Congress, implied] that tribes are faced with, he said. However, RCRA Subtitle D closure requirements exist "for a reason," specifically the health of Indian people, and so should be heeded. Most tribes are already involved in solid waste management, Mr. Roberts said. Larger tribes have few options besides landfilling on reservation, while smaller tribes may have more options, such as sending waste to nearby off-reservation landfills. In either case, he stressed that it is important for tribal decision makers to "get a handle on" requirements for landfill development, including the legal aspects. Mr. Roberts then introduced Keith Jones.

Keith Jones, White Mountain Apache Tribe Environmental Planner and Tribal Engineer, said he leads a staff of five whose hiring began with an EPA GAP grant in autumn 1993. The staff quickly realized the tribe's solid waste problems. The Apache reservation, 1.7 million acres in east-central Arizona, had 14,000 tribal members in six communities. All six communities had at least one dump, "constantly burning," with such severe scavenging that Mr. Jones described it as "people almost living in" the dumps. Closing the dumps, some of which the tribe has now closed, therefore, not only helped the reservation environment but also improved the health and safety of tribal members who used the facilities. Now, weekly trash pickup is available, and the tribe operates a modern landfill with no public access.

A large source of funding for the tribe's solid waste program came from HUD, in the form of a $1.1 million Community Development Block Grant. Winning this grant meant the tribal council had to be made aware that solid waste management needed higher priority than other initiatives, because the block grant could also be used for parks and other community facilities. It took a serious commitment from the council to "pass up those temptations" and spend the grant on a landfill, Mr. Jones said. The grant was used in the following ways: $740,000 for landfill design and construction, $200,000 for equipment, $80,000 for closing existing dumps, and $80,000 for administrative costs. Matching funds of 50 percent

came from the tribe and other organizations ($150,000 from IHS, $300,000 from BIA's Branch of Roads for the landfill access road, and $50,000 from the Inter-Tribal Council of Arizona (ITCA) for planning and education). The IHS funding came from the Sanitary Deficiency System program, which credits initiatives that address solid waste, water and wastewater, and the like. Mr. Jones noted the following about the project's funding:

- The landfill project easily scored high in the SDS prioritization process since it was a new facility directly benefitting all tribal members.

- The tribal council gave the landfill road higher priority than other road needs on the reservation, enabling it to receive tribal funds.

- A HUD grant paid for a tracked loader for the landfill site, but did not pay for collection equipment and other rolling stock.

- A USDA Rural Economic and Community Development Agency (RECD) long-term loan of $600,000 financed two 20 cubic yard (cy) compactors and one of 30 cy; 3000 90-gallon plastic carts for curbside use; and two 1-ton flatbed trucks for bulky waste collection.

Soon after the landfill opened, the tribe offered a free program to all tribal households in which workers were hired to go house to house and clean up old appliances, junk car parts, and the like that had accumulated during years of no curbside pickup. A volume of waste that Mr. Jones estimated as "possibly 40 or 50 years' worth" of large objects went into the landfill right off.

Mr Jones said the tribe offered residential collection only, as not enough commercial waste was generated to make it economically viable for the tribe to obtain rolloffs, dumpsters, and other necessary infrastructure. Commercial hauling was left to private haulers, although such haulers are required to use the tribal landfill. The tribe is now reexamining this area, as BIA and IHS contracts for this service are "lucrative." Since the landfill opened in May 1996, it has received on average less than 20 tons per day (tpd) of waste. Mr. Jones said the tribe is "desperately" trying to stay below 20 tpd in order to remain qualified for federal small landfill exemptions. This could be achieved, he said, by increasing recycling.

Mr. Jones then discussed the scope and financial aspects of the program. The entire reservation is served by the new solid waste management system. The tribal council was adamant that they did not want to operate a commercial landfill accepting off-reservation waste, however, so none is accepted. Furthermore, no waste is sent off the reservation. The council wanted both these conditions on philosophical grounds. Charges were set 3 years ago at $5 per month per household. Mr. Jones said he was impressed that the council had the political will to approve this. With an estimated 67 percent collection rate (some households cannot afford to pay the $5; others refuse), the tribe generates $120,000 per year from household collection fees. Commercial haulers, who dispose of on-reservation commercial waste, pay $30 per ton. This price is low compared to the rest of Arizona so the tribe may raise it soon. Mr. Jones also hopes to raise the household charge from $5 to $8 or $10 per month if possible. This would help rectify the current situation in which total revenue is $185,000 per year while costs are $500,000 per year, with the tribe making up the difference. To break even, Mr. Jones said the tribe needs to levy a household charge $15 per mo. Even with tribe having to cover the shortfall, he opined, the new landfill is worthwhile due to the huge improvement in health and safety. He pointed out that tourism (e.g., camping, hunting, and skiing) is an important source of tribal income, and a clean environment is "critical" to bringing tourists and enticing them to return. The indirect benefits to tourism are hard to account for on a balance sheet but they support importance of the program.

Another part of the White Mountain Apache program involves dump closure. Mr. Jones said 24 community dumps were identified in 1993, and 16 have been permanently closed, including the largest, "nastiest" one, the 15-acre White River site. To close this facility, workers consolidated all the trash into an 8-acre area, compacted it, took clay from nearby hillsides to make an 18-inch cap, placed a 6-inch vegetation layer, and finally installed erosion control blankets and silt fencing. Mr. Jones asked for audience guesses on what the closure cost. Guesses offered were $212,000 and $1 million. He revealed that the actual cost was almost $600,000, which amounts to over $30,000 per acre. Smaller dumps (1 acre or less) have cost about $8,000 per acre. The tribe paid $150,000 for the White River closure, BIA contributed $100,000, HUD paid $80,000, and the remainder came from IHS SDS. Mr. Jones observes that when the closure costs are considered, the dumping of previous years was not free [implying part of the reason open dumping went on so long was that it appeared to be free while proper landfilling was expensive].

Question: How long was the dump used?
Mr. Jones replied that White River was the main community dump for 30 to 40 years. The tribal public works department served as the closure contractor, leased the necessary equipment, and filled all positions with tribal members. Fifteen people were employed for 2 months to perform erosion control. It was, he said, a "very in-house operation."

Question: What happened after White River was closed [i.e. where was waste placed]?
Mr. Jones explained that this closure took place only after the landfill opened; all dumps remained open until the landfill began accepting waste in May 1996. The tribe was careful not to take away the dumps until an alternative was ready. The tribe still finds waste being deposited at some old, closed dump sites because it is hard to change people's habits. Mr. Jones said the tribe is stepping up enforcement. No one has been fined yet, but such actions may start soon to make an example of somebody. Generally, however, the new system is well-received. Mr. Jones said he felt the tribe effectively pooled funds from a number of sources to meet its needs. Although EPA cannot award funds for actual equipment and construction, other sources, including HUD, IHS, BIA, and RECD do. It requires tribal commitment and a partnership with these agencies to get them to visit a reservation, become excited about its solid waste dilemma, and provide funds.

Mr. Roberts began his presentation by describing his work with EPA Region 8. He has served as project officer on general assistance grants, and Clean Water Act § 106 grants. He also worked on pesticides and air issues for the Oglala Sioux of the Pine Ridge Reservation, Rosebud Sioux of the Rosebud Reservation, and Lower Brule Sioux of the Lower Brule Reservation, all in South Dakota. As such, he said he served as advocate or ombudsman for the tribes, seeking EPA senior or middle management involvement on their behalf when needed. His solid waste experience focuses on Rosebud and Pine Ridge. These two reservations are adjacent and the two tribal government centers are about 100 miles apart, so he was able to work for both, even though he was detailed to Pine Ridge. Rosebud was well along its way in siting a facility at Carter, 12 miles from the main village, Mission. The hydrogeologic situation there was well-suited to a landfill. This was reservation trust land, not fee land, and the site was along a major highway [U.S. Route 18], so access was not a problem.

A petition for an alternative liner was undertaken due to the nature of the soils at this location. Mr. Roberts said his role was to help Rosebud package an application. In his opinion, the liner petition guidance is unclear, omitting description of the technical evaluation that must go along with the application for a waiver. Engineering companies working with the tribe were inexperienced at petition preparation although they were good at hydrogeological work. Mr. Roberts said he enlisted someone to run the HELP model and thought that would help fulfil the technical requirements of the petition. But when the tribe sent

its application to EPA headquarters, the answer was that modeling for leachate generation was not enough. Leachate "interception with ground water" must also be done, so the proposal was returned for completion of the geotechnical evaluation. Additional recomputation was needed because the original HELP model runs assumed four cells of 7 acres each on a 40-acre site. The plan has since been reconfigured to two cells, rendering the old model outputs useless and requiring resimulation of fate and transport. At the time of this conference, Mr. Roberts said, the tribe was just weeks from completing the new simulations. The lesson to be learned, he added, was that tribes must ensure their engineers "know what landfills are all about" before starting the process. This requires a civil engineering firm, but not all such firms can do this.

The Oglala Sioux faced the landfill issue too, and had more effort ahead of them since they were not as far along. They started on the work for a landfill at Redshirt Table, the furthest location from most of the 12 communities on the reservation [it is in the far northwest corner]. In the 1970s *Blue Legs* court cases, which concerned this tribe, courts decided that the tribe, BIA, and IHS are all equally responsible for management of solid waste on the reservation. One remedy required under the decision was a community management plan placing facilities such that everyone could use them. [He never got to the point that the Redshirt Table site, due to remoteness, did not satisfy this criterion, but he may have meant to say this.] The remedies also included specific landfill construction requirements such as that sites must be fenced and landfills must be manned to ensure that waste is placed properly.

All this took place before RCRA was enacted. The tribe operated as required for some time, but during development of the Redshirt Table site, a change in tribal administration necessitated restarting solid waste program development. The Redshirt Table site was landlocked, surrounded by fee land, and difficult to access, so it was abandoned. Site evaluation and geohydrological work costing $120,000 were wasted. Then, Mr. Roberts became involved. He and some tribal council members agreed the site was economically infeasible. They identified seven or eight other possible locations, and then ruled out some just upon observing the permeability of their soils. Two possible sites remained, one at Slim Butte [in the southwest part of the reservation], a few miles west of the town of Pine Ridge. That site had good clay, was central to the reservation, and was workable economically. The second, like the abandoned site, was near the town of Redshirt. It was chosen for development and the tribe is now starting over on geotechnical and hydrological work for siting.

A landfill design to meet Part 258 requirements, a transportation plan, and a routing design will be needed. Mr. Roberts estimated transportation would cost $350,000 per year, while landfill construction would cost $1.5 to $2 million, partly including the closure of old dumps. Two dumps are still open, one in the town of Pine Ridge and one in Kyle [at the inside corner of the area where the reservation turns a right angle]. These will remain open until a landfill is built. The tribe looked into sending waste to the closest landfill, in Chadron, Nebraska [25 miles southwest of town of Pine Ridge]. But Mr. Roberts found that this landfill used a "reverse scale" (i.e., charged a higher cost per ton for fewer tons of waste shipped), and also wanted to lock the tribe into a 5-year contract. Since the Redshirt landfill should be open in fewer than 5 years, the tribe did not want to commit to this, even though tribal members are "getting mad" about storing stuff at the two dumps.

Mr. Roberts said there will certainly be a site-specific flexibility request since the clay at Redshirt is "the best in the United States" for building landfills. He hopes to be re-detailed to Pine Ridge to help in the planning efforts. He pointed out that Pine Ridge contains the poorest county in the United States by some measures, but that there are commitments of funds to allow for the landfill construction so that it will get done. Nevertheless, it has been "tough and emotional" for the tribe, which hasn't figured out the economics of how the landfill will operate (e.g., household fees, etc.). IHS and BIA have added recently to

the turmoil as both recently said they cannot continue placing their facilities' solid waste in the two dumps, and have threatened to "pull" their funding [whether rescind something current or cancel something promised for future was unclear].

Mr. Roberts then introduced Bill Quinn. Referring to Mr. Quinn's involvement in a site-specific flexibility request, he said "in my experience, it may be 'flexible' but it ain't easy."

Bill Quinn, Attorney for the Salt River Pima-Maricopa Indian Community, began by stating that the Salt River Pima-Maricopa Indian Community (SRPM or "the Community") has a large, "nice," new commercial landfill on its reservation. He asked for a show of hands in the audience to indicate how many participants' tribes have or are considering opening landfills as a business proposition. Two participants were counted. Mr. Quinn said that SRPM, like most tribes, had open dumps. In the early 1970s, before RCRA, the Community decided, partly at the behest of surrounding suburbs, to open a commercial landfill. In 1992, a flood of the Salt River washed away much of it and the Community was the subject of a citizen suit under RCRA. Mr. Quinn spent 3 years in U.S. District Court, defending the tribe. The landfill was closed, and in light of the suit, members of the Community showed concern and lack of unanimity as to whether the tribe should continue in the commercial landfill business. The tribe held a referendum on the question. By approximately a 55 to 45 percent vote, members voted to stay in the business, so a new landfill was planned. While the old landfill was unlined, the new unit is so advanced that it has won awards from the Solid Waste Association of North America (SWANA) and others.

Mr. Quinn held up a copy of the *Site-Specific Flexibility Requests for MSWLFs in Indian Country* guidance and stated that flexibility "means a lot" financially. He then provided detailed background on the Solid Waste Disposal Act of 1965, RCRA, the 1984 Hazardous and Solid Waste Amendments, 40 CFR 257, and the draft State and Tribal Implementation Rule (STIR). He described how, in 1993, the Campo Band of southern California submitted the first application for recognition of a tribal permitting program under the STIR. The Band planned a 600-acre commercial landfill near San Diego. San Diego County solid waste management was "abysmal," with many landfills closing and waste being shipped 140 miles to Arizona, so San Diego wanted the landfill and the Band knew it was a moneymaker. The Cheyenne River Sioux, SRPM, the Yankton Sioux, and the White Mountain Apache had applications also in the works. Mr. Quinn described 40 CFR Part 258 and the history of the *BAD v. EPA* and *Yankton Sioux* court cases, stating that these cases led to EPA's development of the site-specific process. "I don't have too much trouble with it," he said, alluding to Mr. Roberts' comment that it "ain't easy." He then outlined the guidance document. Before it was issued, he noted, SRPM had already submitted an application to EPA Region 9 for alternative daily cover and alternative liner design. On May 8, 1998, Mr. Quinn said, EPA published in the *Federal Register* a notice saying that the application is in and that a public hearing is scheduled for July 29, 1998. "I have appreciated the cooperation of EPA on this. EPA [Region] 9 and [Ms. Rudek's] office have been great." He praised the swiftness with which the site-specific guidance was issued after the *BAD v. EPA* decision, calling it "breakneck speed by federal bureaucratic standards."

Mr. Roberts interjected to qualify his earlier comments about the guidance. He said there is no technical guidance on what engineering backup is required for an application. He recommended a book by Bagchi for this "hard science" part of landfill design not discussed in the guidance. [Amalendu Bagchi, 1994. *Design, Construction, and Monitoring of Sanitary Landfills*]

Audience Participation

Question from Mr. Jones: Do you anticipate the site-specific rule will be challenged in court?
Mr. Quinn replied that the document arose because of court decisions and represents EPA "sticking its neck out a little bit." He suspects that if the Campo Band tries to proceed with an application for alternative design for a seismic impact zone, it will go to court. He acknowledged that amendments to RCRA would be more immune to court challenge than is the guidance, but characterized the efforts of [Senator] Slade Gorton [Republican of Washington State] as "seeking to destroy sovereign immunity in every form" by trying to attach riders to bills of every kind.[1] So, any attempt to modify RCRA, he argued, would invite such riders, which would be more dangerous to Indian interests than the intended changes in RCRA would be useful. The outlook for amending RCRA is, therefore, not good, so tribes must get by with this guidance even if it is prone to court challenge.

Mr. Roberts then closed the session.

[1] Mr. Quinn's blunt claim about Sen. Gorton's intentions seems to be supported by the introductory language of a bill introduced by Sen. Gorton, which reads in part:

(3) sovereign immunity, a legal doctrine that has its origins in feudal England when it was policy that the 'King could do no wrong,' affronts [the fifth amendment to the Constitution] and is incompatible with the rule of law in democratic society;
(4) for more than a century, the Government of the United States and the States have dramatically scaled back the doctrine of sovereign immunity without impairing their dignity, sovereignty, or ability to conduct valid government policies;
(5) the only remaining governments in the United States that maintain...the full scope of immunity from lawsuits are Indian tribal governments;...
(7) for the ... thousands of people of the United States, Indian and non-Indian, who interact with tribal governments every day, the rights to due process and legal remedy are constantly at risk because of tribal immunity;
(8) by providing a complete shield from legal claims, the doctrine of sovereign immunity frustrates justice and provokes social tensions and turmoil inimical to social peace...

Planning for the Future: Solid Waste Management Alternatives
Wednesday, May 20, 1998, 1:30 to 3:00 p.m., Capri Room

Agenda

1. Gerald Wagner, Blackfeet Tribe (Moderator)
   Taking Advantage of Recycling Opportunities

2. Pat Gwin, Environmental Protection Program Manager, Cherokee Nation of Oklahoma
   The Subtitle D Landfill Experience

3. Dr. Norman Richards, Mohegan Tribe
   Combining Environmental Risk Reduction and Cost Savings

Discussion

Gerald Wagner, Blackfeet Tribe, introduced Pat Gwin.

Pat Gwin, Environmental Protection Program Manager, Cherokee Nation of Oklahoma opened discussion with the observation that landfills are misunderstood: They are, he said, geographical regions in which to store all discarded items from a larger geographical region. As an analogy, he said, consider, in sweeping the floors of a house, sweeping everything to a central point. "Landfilling is when you pick up the rug and sweep it underneath. The waste is still there, still a problem, just out of sight and in a lot of cases out of mind." Some day, he posited, we will look back on landfilling as "folly" but it is the best available technology right now. Over history, according to Mr. Gwin, western tribes designated locations near villages where discarded or disused items, carcasses, and the like were placed in a repository and, if every reusable, retrieved.

The Cherokee landfill, he said, sits on 160 acres of Ozark uplift on reservation[2] lands. Entrance to the landfill is restricted to avoid unmonitored access. The tribe planted a 200-foot strip of pines around the unit as a visual barrier. The landfill is small, accepting 100 to 500 tpd depending on the season and the number of clients being served. Mr. Gwin observed that the operation of landfills is very expensive. Costs include compliance with RCRA Subtitle D, equipment and its repair, and associated buildings. Ironically, Mr. Gwin said, the landfill's diesel tank to fill trucks needs costly spill prevention and containment structures, yet diesel-contaminated soil is allowed in the landfill.

Mr. Gwin continued with an overview of landfill operations, accompanied by a slide show:

- At a landfill, operators are filling space, so they must measure the rate of filling by either volume or mass; the Cherokee landfill measures mass. The tipping fee is less than $20 per ton.

- A separate bin for tires prevents their placement and subsequent floating in the landfill.

- The tribe is continuing to build cells at the landfill. Cheap building of cells is $200,000 per cell. "Challenging" cells cost more. The liner for a 7-acre area of the landfill costs $1.2 million.

[2] Strictly speaking, Oklahoma tribes do not have reservations due to the original conception of the entire state of Oklahoma as "Indian Country." The tribes instead hold jurisdiction over counties or other administrative units. The term "reservation" will continue to be used here as shorthand.

- To protect surface water, the landfill has a leachate collection pond and a stormwater runoff pond. It is important for surface water protection and public relations to cover all trucks entering the landfill. The unit assesses a large surcharge for uncovered loads because the landfill operators are responsible for cleaning up roads contaminated by trucks on the way.

- The spotter is a very important person. He or she looks for inappropriate waste and screens it out of the landfill. This person should wear steel-toed shoes and other safety gear as the work can be dangerous. Mr. Gwin pointed out, ruefully, that despite the regulations and the good intentions of landfill operators, generators can dispose of inappropriate waste of all kinds by packaging it in opaque trash bags to shield it from the spotter's eyes.

- Daily cover is the most oft-cited violation of landfill regulations.

- The picker, an employee who picks up waste that falls off trucks, gets in tire treads, or otherwise escapes, cleans up wherever needed. If this is not done, rodent problems increase.

- Final cover is difficult to keep grassed because landfill gas damages roots and the grass is hard to water since it is on high ground. Mr. Gwin emphasized also the smell of these gases. He said that operators must vent gas well to keep grass alive, and should monitor gases constantly. Most landfill employee injuries, he said, are due to methane explosions.

- Monitoring of ground water, storm water, methane, etc., is actually a small cost. He recommends out-of-house monitoring in order to have experts accountable for these procedures, but some in-house facilities are useful in order to know what goes out in samples.

- Ground-water contamination is not the most common kind of contamination, but it is the best known. Monitoring wells should be guarded against vehicle damage using bollards.

- Surface water monitoring is not required, but should be done because neighbors care and notice. The Cherokee landfill has a culturally significant spring 100 yards from its border. Designers must grade landfills so that all storm water flows to a holding pond that can handle a 24-hour, 25-year event. In the first years of a landfill cell's operation, construction-related sediment is likely to contaminate streams despite the holding pond. The Cherokee landfill monitors this.

Mr. Gwin closed by expressing his hope that the United States will emulate Europe, where, he says, landfills are becoming a thing of the past due to a shift to other practices.

Mr. Wagner then introduced Dr. Richards.

Dr. Richards gave a general overview of the Mohegan tribe's programs and future plans:

- The tribe has teams for pesticide management, airshed management, watershed management, and solid waste management.

- The Mohegan casino uses a piggery for food waste. Calculations showed that incineration of food waste would cost $184,000 per year, while working with the piggery costs $27,000 for the same waste stream. The tribe uses compost made from returned pig waste to improve the sandy local

soil for native plants. The tribe is contemplating an aquaculture project and is exploring the use of worms grown in compost as a protein source for fish.

- The tribe has solved the question of office paper disposal using several reduction techniques. They now dispose of so little that the hauler wants to take back his rolloff because the tribe doesn't fill it with enough paper. Further paper reductions could come from the aforementioned replacement of paper cups and plates with compostable polylactic acid items. (See discussion in the Audience Participation section below.)

- Regarding air pollution, the tribe attracts many vehicles to its facility. The emissions from these vehicles are calculated using a mathematical model, and the tribe purchases emissions credits from other (off-reservation) facilities that have reduced emissions. These credits cost over $60,000 in the most recent month. [Not sure, but Dr. Richards might have alluded to the purchase of these credits being voluntary. Seems unlikely given the cost, however.] Dr. Richards described related esoteric research about natural gas-powered cars, fuel cells, ground-source heat, etc.

- Solid waste contractors must be certified by the tribe. Certification requires a 2-hour Mohegan solid waste management training class.

- The tribe is committed to toxics reduction. HVAC and other systems use many chemicals, and Dr. Richards has thoroughly researched what would be the least hazardous alternatives since material safety data sheets (MSDSs) are insufficient to enable this determination.

- The casino recycles pallets and fryer grease (the latter sent to a rendering plant). Suppliers use recycled plastic milk carton crates, which are then reused or recycled. Old buildings were disassembled and moved in order to be donated to a nearby town.

- Using state data, Dr. Richards assembled a percentile ranking of the recycling rates of towns in Connecticut. The Mohegan Tribe, with 44 percent recycling, is at the 97th percentile. Dr. Richards expects that the tribe will soon exceed the 44 percent recycling rate "by far."

- The tribe uses integrated landscaping, which relies on integrated pest management. They select local plants that need less pesticide and less water, and include culturally important species. An irrigation system uses ground water to water the plants. Dr. Richards said this water could be heated before application in order to reduce use of cooling towers and accompanying need for expensive and toxic blowdown chemicals. [i.e., this is done to reduce cooling tower use, not because there is any need to heat the irrigation water.]

Mr. Wagner began with background on the Blackfeet Reservation. The 1.5 million-acre reservation lies in northwestern Montana, bordered on the west by Glacier National Park and on the north by Canada. Its population is about 9,000. Recycling started in 1994 and is a public-private partnership coordinated with Blackfeet Opportunities, Inc.; the Blackfeet Reservation Development Fund, and the tribal government. Forty tons of recyclables were collected in the first year, followed by 80 tons the next year. The program started by collecting aluminum cans, then cardboard and office paper, and is still growing. A baler was funded by EPA, then bought by the recycling program.

The town of Browning is the only location served in winter due to heavy snow. Collection expands to Glacier National Park in summer, when Blackfeet Opportunities, Inc., which sells firewood to park

campgrounds, backhauls aluminum cans from the park. Outreach supports the recycling efforts through community education, bulletins in the tribal newspaper, presentations in the reservation's seven communities, classes at the tribal college, and landfill field trips for students from the reservations three school districts. The landfill trips teach children the importance of "land—*our* land" and its care. The ugly sight of a landfill, Mr. Wagner said, gives children a better idea of where trash goes and what becomes of it.

Challenges facing the solid waste program, according to Mr. Wagner, are the reservation's rural location and harsh climate. The location, coupled with the large size of the reservation, means collection vehicles must travel 600 to 900 miles per week, much of it over unimproved roads. Remoteness also means that no local markets for recyclables are available, resulting in a 250-mile round trip (to Great Falls) with recycled aluminum and a 500- to 600-mile round trip (to Missoula) for cardboard, which is only shipped one to three times annually. The climate includes much heavy snow and high winds. (Mr. Wagner said the latter reach 90 to 100 mph near Browning, and that every year, at least one train is blown off its tracks.) These conditions are treacherous for recycling trucks.

Mr. Wagner indicated that the tribe is looking for opportunities to help keep landfill use below 20 tpd in order to retain regulatory exemptions. One such effort includes attempts to develop local markets: Blackfeet Writing Co. will take in plastic bottles, shred them, form the material into pellets, and sell these to pen makers who would then extrude pens. In the future, Mr. Wagner hopes to start a curbside recycling program in one community, complete with containers in which to separate recyclables. His department also is looking into composting, probably on a household scale rather than in a municipal facility. Also under examination is the possibility of shredding paper and selling it to local ranchers for use as animal bedding. The tribe is now buying a glass crusher, but because markets for cullet are limited, this equipment will be used to make glass consume less volume in the landfill rather than to prepare glass for recycling.

Finally, Mr. Wagner returned to the topic of education, stressing personal responsibility. He believes it is necessary to teach people the importance of a clean reservation for both residents and visitors. This teaching would start from the family level and continue through communities and on to the reservation as a whole. "It must start with the children," he said.

Audience Participation

Question: Where can one obtain more information on polylactic acid?
Dr. Richards replied that polylactic acid is a fermentation product of corn; lactic acid from fermentation is polymerized into long chains and the resulting product is substituted for plastic. Its chemical bonds are very vulnerable to decomposition, unlike cellulose, so that the material decomposes thoroughly and quickly when composted. Polylactic acid utensils are slightly more expensive than paper [or plastic, he probably also means] but can be made using the same molds as plastic. Cargill is the tribe's prospective polylactic acid supplier. Dr. Richards said the food services staff has some concerns about this "exotic" material, so they want to do a test run to be sure it does not lack strength, melt in hot liquids, or otherwise lead to customer complaints.

Question: When polylactic acid burns, is it problem?
Dr. Richards answered that the tribe has no intention of burning these materials, as the intent of their introduction is to facilitate composting. He said, however, that he "can't foresee any problem" with a few such items inadvertently being burned "unless it has trace contamination." Dr. Richards added that polylactic acid has an ester bond that breaks down with enzymes common in [anaerobic] bacteria (although the intent is to compost in aerobic conditions) but that he "has an office full of it" and it has not broken down prematurely under indoor conditions.

Mr. Wagner then closed the session.

Community Education: Foundation for Successful Solid Waste Management Programs
Wednesday, May 20, 1998, 3:30 to 5:00 p.m., Capri Room

Agenda

1. Laura Weber, Director of Solid Waste Management, St. Regis Mohawk Tribe (Moderator)
   Taking Steps to Increase Community Awareness

2. Cedric Good House, Administrator of Standing Rock Sioux Tribe Environmental Office
   Gaining Community Support to Close a Landfill

3. Charlie Roper, AmeriCorps Member for City of Nondalton, Alaska
   The AmeriCorps Environmental Experience: A Participant's Perspective

Discussion

Ms. Rudek introduced Laura Weber.

Laura Weber, Director of Solid Waste Management, St. Regis Mohawk Tribe (SRMT) said she gained an interest in solid waste management during her studies for a masters degree in civil engineering. During those studies, she examined the use of waste paper as animal bedding, focusing on the potential for heavy metal contamination. She subsequently operated her own consulting business before becoming energy coordinator and then solid waste director for the tribe. Ms. Weber then provided background on the SRMT. Tribal lands span the U.S.-Canadian border and are overseen by three governments. SRMT is the U.S. federally recognized tribe in upper New York state. The Mohawk Council of Akwesasne is the Canadian federally recognized entity in Quebec. The Mohawk Nation office is the traditional government overseeing all Mohawk lands but not recognized by either federal government. The reservation is located on the St. Lawrence River.

In the 1950s, the Robert Moses Dam was built upriver from the Mohawk lands. It cheap hydroelectric power enticed industries to come to the area, so Alcoa, Reynolds Aluminum, and GM facilities as well as a paper mill are located near the reservation. These industries, Ms. Weber said, have polluted the river and the land. The GM facility is a Superfund site with "heavy" PCB contamination. Most of the tribe's environmental interest, therefore, focuses on water issues and industrial pollution, relegating solid waste to a lower priority and making Ms. Weber's job harder. She must work hard, she said, to get the Mohawk community to think about the issue and understand how their actions directly impact solid waste management. For example, open dumping and open burning persist, despite recent educational efforts aimed at trying to show the harmfulness of these practices.

Ms. Weber said she thinks of solid waste management as an evolving program in which planners try things and if they are unsuccessful, change and try others. New approaches are always in development. Ms. Weber realized that adults as well as children needed solid waste education, but her approach has heretofore been "top-down," that is, adults were the main focus and it was thought that the adults would pass on knowledge to their children. Teaching methods used included hands-on demonstration projects, newspaper articles, radio announcements, newsletters, and workshops. An example of a hands-on project is a composting project operated for 3 months at a senior citizen complex. All community members were invited to visit and learn. Ms. Weber said she walked them through composting procedures from setup to watering and turning to end product. The two tribal newspapers and especially the local radio station

[CKON, broadcast from the Quebec side] also proved useful. "We go to the radio station for things needing maximum exposure," Ms. Weber noted. Newspaper articles have addressed topics such as waste oil and the negative impacts of open burning. The open burning article showed that emissions from this practice are dirtier than those from incinerators.

The top-down education approach did not prove as successful as was hoped. Now, Ms. Weber has switched to a "bottom-up" method, with education focusing on children. To establish a self-sustaining, self-perpetuating solid waste knowledge base, Ms. Weber will choose 10 students from the environmental club at the high school and educate them about source reduction, waste minimization, reuse, recycling, and proper solid waste management techniques. She will then ask them to go home and educate parents and siblings and alter their solid waste habits to include aggressive waste reduction, reuse, recycling, etc. Ms. Weber's office will evaluate waste generation data of these homes before and after the educationally driven changes. Once this process is complete, these 10 students will be asked to educate 10 more, who will each, in turn, educate 10 more, beginning a continuing cycle. Eventually, everyone in the tribe will have had a solid waste education. Ms. Weber said she feels this will be more productive than top-down education because children hold their families accountable.

In closing, Ms. Weber stated that any solid waste management education process must be evolving and always examining what is working and what is not. To make such programs as successful as possible, she advised, educators should use all available media resources, especially radio or, in tribes that operate stations, television.

Cedric Good House, Administrator of Standing Rock Sioux Tribe Environmental Office first greeted the audience in the Lakota language. He then began by pointing out that, of all EPA rules and regulations, the landfill criteria affect people most because they "change things socially." To teach citizens about this, he stressed education and other straightforward means of reaching people. If you start talking in acronyms and numbers, it "is the first sign of being a bureaucrat; if you *understand* that language, you *are* a bureaucrat," Mr. Good House said. [implying you will therefore not be listened to as an educator] He said his background was in treating chemical dependency. After serving in Vietnam, he worked 9 years as an addiction counselor. He entered the solid waste realm when Subtitle D regulations were taking shape and his tribe had money to commit to compliance. Mr. Good House said that, because of his counseling and communication experience, he was asked to talk to the community to "get something going." He explained that there are four areas of communication he found important as an Indian solid waste outreach professional:

- *Reading* to learn and understand RCRA and reinterpret it for tribal members, both in non-regulatory, non-technical English and in two dialects of the Lakota language.

- *Writing* concepts in a way people could understand and asking people to write down what they thought a landfill or dump was and bring ideas back.

- *Talking*. " 'We used to be able to meet and talk for days on end,' " Mr. Good House said his grand-father once told him. [i.e. stressed oral communication tradition of his tribe and/or tribes in general]

- *Listening*. He said that we (solid waste personnel) should be good listeners and be attentive to tribal members as they talk, just as they are expected to listen to us.

Mr. Good House then mentioned the bumper stickers he distributed to participants reading "How we treat our land says a lot about how we are as a people." This phrase, devised by a Sioux elder, reinforces self-

respect. He invited children to do a similar exercise, that of making a poster to encourage environmental protection. People are also invited to participate in radio talk forums about the subject. In these ways, people can present views and contribute input.

In addressing open dumps, Mr. Good House said the tribe is using GIS [graphical information systems] and GPS [global positioning systems]. He explained an educational effort under which he takes sixth grade students to an open dump site. First, he divides the site into quadrants and "lets kids fiddle with" GPS machines to delineate the quadrants. (The GPS data is later used to show the dump on a GIS map, indicating whose land it is on, how close it is to the nearest surface water, and other useful information.) He then divides the class into four groups, each of which documents the contents of one of the quadrants.

Professionals are called in to remove heavy items, potentially hazardous waste, and other dangerous materials, leaving only household waste. Students watch as these people work with protective gear on, which illustrates the potential dangers of waste. The children then are issued gloves and begin picking recyclables out of the household waste. Finally, BIA workers are called in to cover the remaining waste. With this in-depth involvement, the students "then own that. Before the regulations can be respected, we have to own that land, we have to own that water, the Grand River, the Missouri River." Mr. Good House indicated he used "own" to mean take responsibility for. He said that he would want to go to the Missouri River and see that "when I leave, there isn't trash." He recalled stories of grandparents using Grand River water for drinking and cooking, whereas the water cannot be used that way [i.e., without treatment] today even though contaminants in the water are at allowable levels. Elders cannot understand how the river is not polluted according to regulations, and yet cannot be consumed.

Mr. Good House then introduced Charlie Roper.

Charlie Roper, EPA AmeriCorps Member for Nondalton, explained that his Alaska native village, which is 300 miles southwest of Anchorage by air, abuts a lake and a mountain. Its population is 240. In the village, "there's trash everywhere," Mr. Roper said. When he first found out what toxics are and took the AmeriCorps position, he was told to do surveys to identify problems. The problem was already well-known, but was not being addressed. Nobody cleaned up the waste although the mayor and chief requested it. Mr Roper, therefore, went house to house and asked people what they wanted to do. He told them the hazards of batteries, the worth of aluminum cans, and other waste facts. People said "what do you do with them?" which Mr. Roper said was a good point. The village's few roads total 7 miles and roughly form a circle. This and the remote location mean that materials to be recycled or disposed of outside the village must be flown to Anchorage. A pilot donates space available [but, implied, such space is at a premium].

When he joined AmeriCorps, Mr. Roper said, he did not know how to educate people. He was advised to go to the schools [i.e., rather than doing outreach to adults]. He said he thought children would not understand the issues, but he heeded the advice. After the first day, he discovered "it was us that didn't understand," and the children who did. He explained the value of aluminum cans and how to crush them, and informed children about telling adults where there are batteries to be picked up.

"Educate the kids and they will teach you," Mr. Roper observed. Now 1½ years into his AmeriCorps term, he said he has learned much about environmental issues, but the children now have taken over and can ask questions to which he does not have ready answers. "It all starts with picking up that first piece of trash, [by] that first person," Mr. Roper said, and emphasized working with children. Although his AmeriCorps stint is ending, he said he "doesn't want to walk away from" waste issues and will still teach about that topic after he returns from school.

Audience Participation

Question from Irving Provost, Oglala Sioux Tribe: What is AmeriCorps?
Mr. Roper clarified that it is a 1-year service program that pays a living stipend. Participants are tasked with educating their communities. The program is sponsored by EPA and the state. [Note: The specific task and sponsorship are true only of the RurAL CAP Alaska EPA AmeriCorps Program, not AmeriCorps in general.]

Question from Dino Chavarria, Santa Clara Pueblo: What fees do you charge for solid waste services, how did you educate the public about these fees, and how is compliance?
Ms. Weber answered that SRMT uses outside haulers to provide such services. They charge the fees and the tribe "leaves it up to them" to educate people about the fees, which are assessed on a monthly basis. A few years ago, she said, the tribe subsidized disposal, but it no longer does, so fees have increased, much to the chagrin of tribal members. SRMT is now designing and constructing a transfer station in order to take over their own solid waste management. Ms. Weber said she is unsure whether the tribe will need to charge a monthly fee.
Mr. Good House said that, when his tribe was deciding on closing landfills, they put a dollar figure on all necessary compliance activities. The Standing Rock Sioux received $96 million from JTAC [Joint Tribal Advisory Committee Economic Recovery Fund, probably compensation for land], and the people decided which route to go. [Not clear what he means about financing here.] The tribe chose a private pickup service, and fees were negotiated to a reasonable rate in comparison to nearby non-Indian areas and with respect to the hauler's tipping fee. Mr. Good House's office issues permits to the hauler and to a restricted use facility [not elaborated on]. He indicated that his staff was upset because, over the past several years, EPA extended deadlines for open dump compliance, enabling other tribes to remain noncompliant, while Standing Rock was in compliance and "not getting credit for it." Mr. Good House's office issued pamphlets for private businesses about hauling fees and bulky waste fees as well as a schedule of when services were offered.
Mr. Roper answered that his village has an "uncontrolled dump 20 years old and 20 feet high" but is trying to get a landfill, and that until then he will continue his education efforts in the present form.
Elena Lavorro, employee but not member of the Hualapai tribe, offered input. In 1994, the Hualapai tribe compared the cost and feasibility of a landfill to that of a transfer station/materials recovery facility (MRF). The latter was selected. In a door-to-door community survey, "everyone" said they did not want a regional [i.e., commercial] landfill. The tribe opened the transfer station/MRF and is now closing a landfill. Fees are being charged for waste hauling. The tribe is hauling waste more cheaply than would a regional hauler. Ms. Lavorro said that she had information she was willing to share about this experience.

Question from Ms. Sonneck: We have 20 AmeriCorps Salmon Corps among all TSWAN tribes doing education, bulk item pickups, and dump cleanups. Why is there only one AmeriCorps member in your village?
Mr. Roper replied that there are only 25 positions in the [RurAL CAP Alaska EPA] AmeriCorps Program, due to the expenses of paying the participants' stipend and education and transportation costs in Alaska's vastness. With so few participants in such a big space, he said, there are not enough to provide one for each Alaska native village, let alone two for any village.

Stanley Paytiamo, Pueblo of Acoma, offered input: He said he served on the Sedona County solid waste committee. The country school district invited three students from each school to be educated on community service one Saturday with professionally-made videotapes. These students returned to their schools (one of which is on their reservation). The three students formed groups. One group attacked graffiti, one addressed recreation needs, and one worked on solid waste issues. Mr. Paytiamo's involvement came when the graffiti group came to his office (the environmental department) for paint and was given five 5-gallon

cans to cover graffiti. The children of the three groups educated their peers in the schools. This started from the kindergarten level and went all the way to the Tribal Council and expanded into community education. The students became experts and educated parents much like Ms. Weber's "bottom-up" approach.

Mickey Douglas, Seminole Nation of Oklahoma Environmental Protection Office, offered input. He said the Nation is working with a county [which is apparently their jurisdiction, as Oklahoma has no reservations *per se*] in a Solid Waste Trust, whose committee includes bankers, retirees, farmers, and ranchers all working together to do something about solid waste. They won a $10,000 grant from the Oklahoma State University extension office. They used the funding to set up a solid waste program with a "trash cop," who is also the captain of the Seminole Nation Light Horsemen. The tribe has helped the county, which encompasses 409,000 acres, to identify hundreds of small dump sites, not including "tiny ones off the beaten path." It is important, Mr. Douglas said, for the community as whole to work together. There is strength in numbers, he noted, advising against limiting efforts to working only within a tribe. The Nation is trying to make the trust self-sufficient in the following manner: the "trash cop" goes out to illegal dumps, investigates, and if he finds three discarded papers with the same name on them, the name is turned over to the district attorney's office, which attempts to find the offender and levy $200 to $1000 fines for illegal dumping. This money will go back into the trust when collected. The trust has also applied for an education grant. If it wins this grant, trust representatives will "take education to the children."
Mr. Good House stated that in 1993, Standing Rock founded a similar environmental quality commission consisting of people from each of the reservation's five communities plus members of county commissions in two counties they cross. The tribe's code requires finding only one discarded paper with a name on it as grounds for levying a fine. The tribe is working with the U.S. Army Corps of Engineers (COE) to get a memorandum of understanding allowing them to enforce dumping regulations along the river. [Not clear whether he means Grand River or Missouri River or generally all COE-controlled rivers on the reservation.]
Gloria Notah, Navajo Nation EPA, offered input. The Nation has been somewhat successful in negotiating cost-share agreements with counties encompassed in the reservation. They are dividing the expenses of operating and maintaining transfer stations. IHS also has cost-share agreements for the cost of constructing solid waste facilities. These programs, she said, are working well. The Nation is now developing an enforcement program and negotiating a cost-share agreement for a law enforcement officer.

Question from Ms. Weber for Mr. Good House: When youths go out and do open dump assessments, what sort of training do you provide? Are there any concerns about health and safety?
Mr. Good House answered that Rhet Albers, a former EPA employee and environmental engineer, works with him in this area. He points out hazards and the children do not actually handle the trash until such items are removed. "What they see, they document." Professionals on contract (using casino funds) clean up the waste. They use protective gear and take liability into consideration. One of the tribe's two casinos is located 10 miles into the reservation from the north and the other is situated on the west bank of the Missouri River, about 5 miles from a river crossing. Many illegal dump sites are within the stretches between each casino and off-reservation areas. All but one of the tribe's communities are away from those areas, Mr. Good House said. Unemployment is "pretty well up there," so "we don't find too many [tribal members] buying furniture, TVs, refrigerators, appliances." Many live in HUD housing, so HUD disposes of their waste. That is, tribal people cannot afford the items seen in illegal dumps and do not dump. He said common sense, therefore, dictates that the illegal dumps consist of materials being brought onto the reservation by nonmembers.

Ms. Weber summarized the session by saying that the way to approach education is to teach our youth and pull resources together to help each other out. Due to great interest in the AmeriCorps program, Ms. Weber provided Ms. Rudek's phone number as the contact point for AmeriCorps information.

Preventing Illegal Dumping
Thursday, May 21, 1998, 1:00 to 2:30 p.m., St. Martin Room

Agenda

1. Gloria M. Notah, Navajo Nation EPA
   Utilizing administrative and judicial enforcement mechanisms

2. Megan Gavin, EPA Region 5
   Using the *Illegal Dumping Prevention Guidebook* best practices tool kit

3. (James J. Fletcher, Morongo Band of Cahuilla Indians/EPA Tribal Operations Committee, unable to attend)

Discussion

Ms. Tong introduced Ms. Notah.

Ms. Notah first provided background on the Navajo Nation. Its 18 million acres span Arizona, New Mexico, and Utah. Its government, with executive, legislative, and judicial branches, is centralized in Window Rock, Arizona. The reservation has 110 "chapters," local communities representing local people. Industry on the reservation includes three power plants, three coal mines, much oil and gas, tourism, "abundant" natural resources, timber, fish and wildlife, and grazing. Commercial businesses are also present.

The tribe ensures the use of integrated solid waste management through enforcement, technical assistance to chapters, and a public education program that goes out to schools and communities to explain the need to manage waste properly. In 1996, with a grant from the ITCA and EPA, the tribe inventoried dump sites. They cataloged 465 sites ranging from 0.5 acre to greater than 10 acres. To be counted, a dump site had to be used by at least four families. Many of those found are considered "surface scatter" sites, with no trenching. The inventory has not been reevaluated since 1996, but Ms. Notah said the dumping situation "probably is now much, much worse." Historically, tribal members have burned waste in 55-gallon drums and hauled ashes to a dump.

In the early 1990s, regulations came into place and the Nation addressed the need for solid waste infrastructure. [A slide showed an IHS-county cooperative transfer station.] Smaller chapters use 40-cubic-yard open-top bins, but problems arise regarding the cost of maintaining and transporting the bins. Chapters rely on the good will of users to pay. [A slide showed a sign on a bin asking users to pay in a nearby building.] Ms. Notah said "99 percent of people don't" pay. In 1991, the Nation enacted its first solid waste code and has revised it twice since then, most recently in August 1997. Because of a "serious problem" with lack of enforcement and education, the Navajo EPA's solid waste program was established to ensure compliance with the new code. When compliance work started, Ms. Notah encountered a lack of solid waste management facilities for people to use. The focus, therefore, shifted to infrastructure development, such as transfer stations, until 1996. She worked with the tribal government to establish a solid waste management program under the community development division. This was created for fiscal year 1998. That division is now responsible for addressing the planning and development of solid waste facilities, freeing up the Navajo EPA solid waste program to focus on compliance and enforcement as originally intended.

The tribe now wants to focus on dump closures. Funding so far had been "about zero," until this fiscal year when the tribe allocated $400,000 to start closure efforts. Closures now also are the responsibility of

the community development division. Earlier, the solid waste department did one closure, within Window Rock, on the a site known as "the airport dump" or "the fairgrounds dump." It was a surface scatter dump in a dry wash bed, consisting of five "little subsites" along a mile of the wash. Closure was achieved with the involvement of the tribal department of natural resources (as coordinating agency) plus in-kind services of the water resources department (equipment), the office of safety and health (monitoring, personal protective equipment), and a local chapter (temporary laborers). The overall cost was more than $70,000, much of it in-kind, over 8 days. The solid waste program of the community development division is still organizing self, so further closure activity has not started.

Ms. Notah explained that the latest revision of the solid waste code incorporated stiffer penalties for violations. Enforcement officers were hired under a memorandum of agreement between Navajo EPA and the rangers department [not clear whether she means tribal or other rangers]. The Navajo EPA also established investigation procedures incorporating administrative and judicial enforcement mechanisms. Furthermore, they established a procedure for issuing notices of violation to people using dump sites. Dumpers are first notified in writing, advising them of the violation and allowing them some time to "go back and clean up the mess." If there is no response, a second notices of violation is issued. If that notice is also ignored, Ms. Notah said her department then refers the case to enforcement officers who can issue citations. Notices of violation are getting positive responses such as "I didn't know there was a law" or "I didn't know there was a transfer station" [i.e., positive in that it isn't malicious dumping with knowing disregard of law]. The enforcement program began 2 years ago and thus far has yielded positive results. Enforcement officers have taken several cases to court, resulting in fines and people being put on probation. Ms. Notah said she has not yet been able to publicize these penalties "but needs to" [i.e., to deter others]. She said she has a "dedicated" staff, and they are working hard to address illegal dumping, but with 18 million acres and only four permanent employees, it is difficult to cover the whole area.

Another part of the strategy is public education. The educational program tries to teach people what proper solid waste management is and why they need to practice it. Efforts focus on school children as well as local communities and chapters. Furthermore, BIA has an adopt-a-highway program. Ms. Notah said her office encourages tribal offices and businesses to adopt highways, addressing trash on rights-of-way. The tribe, Ms. Notah said, wants to expand enforcement, establish a permitting program for solid waste facilities, and expand public education efforts.

Question: When prosecuting violators, have you tried sentences of community service including cleanups?
Ms. Notah answered that "it's up to the judge" but that no one has yet been sentenced to community service. Over the past year, three cases went to court and none did community service. In other situations, violators have gone to court and plea-bargained. The littering code was used instead in those cases, and sometimes thrown out in exchange for pleading guilty to criminal nuisance or similar charges.

Question: How much are the fines?
Ms. Notah replied that civil penalties can be $500 per day or more. Criminal penalties are $500 per day, 180 days in jail, or both.

Question: Where is the waste that is collected at transfer stations hauled?
Ms. Notah said that all waste is hauled off the reservation. The tribe has no Subtitle D facilities on reservation, but "three or four" are adjacent to it. All transportation is provided by off-reservation contractors, as the tribe has no collection and transportation system. "We're basically making a lot of contractors very rich," she said in summary.

Question: Are tribal collection and transportation, as well as landfills, under consideration?
Ms. Notah answered that the tribe has considered these options. As it now stands, the tribe has trouble with users paying fees for transfer stations. It would be easy to build a landfill, but it would be hard to

operate. [implying that if users will not pay for transfer stations, they certainly will not pay the even higher fees for a landfill] The tribe hopes to do an economic feasibility study on these options soon.

Question from Ms. Tong: Have you involved the community in self-policing [i.e., community watch]? **Ms. Notah** replied that the tribe encourages people to report dumping. The majority of complaints come from the public, and these are documented. There is no Report-a-Dumper or such formal program, but communities are becoming aware. Some organize cleanup days and similar activities.

Megan Gavin, EPA Region 5, introduced the *Illegal Dumping Prevention Guidebook* as a toolkit providing tips on "ways you might not have thought of" to address dumping. These are tips EPA has researched and found effective. The approach for developing the *Guidebook* was that EPA would "add value" to local efforts. The Agency searched literature and the Internet for information, and consulted "area teams" representing various areas of Region 5 to see if illegal dumping was a problem in each area. It was found to be more prevalent in lower-income areas. The Agency held stakeholder meetings with law enforcement, nonprofit leaders, etc., introduced the *Guidebook*, asked for their input, and offered their resources to help. The researchers found that community groups think money will solve illegal dumping. The *Guidebook* says money might not be necessary if a community works together diligently and uses resources not previously considered.

Negative impacts of illegal dumping, Ms. Gavin continued, include health and safety hazards such as physical/chemical dangers and vectors; environmental hazards such as fires, erosion, flooding, and contamination; and socioeconomic hazards including lost property value and image problems.

The *Guidebook*, she said, has four themes:

- **Maintenance and controls.** Once sites are identified, devise cleanup efforts (plan, coordinate, and form partnerships) and keep sites clean (use signs, lighting, barriers, and landscaping).

- **Outreach/involvement.** Establish community programs (events, policing) and effective outreach and education (identify target audiences, devise messages, select mechanisms). Also use outreach as advertising. For example, get free use of rolloffs by publicizing who donated the containers and ensuring the containers are pictured in newspaper articles and other public relations materials. Publicization of cleanup can also shame illegal dumpers into stopping by making the cleaned area a point of community pride.

- **Enforcement.** Implement ordinances (effective components and use) and involve law enforcement from the beginning, as a positive force. Put into place dedicated enforcement and prosecution personnel and field operations. Include training of law enforcement officers who might not know how important solid waste rules are and what authority they have. Ensure that citizens know whether they can report violators and if so, to whom (i.e., law enforcement or environmental department?)

- **Measurement.** Track dump sites (with mapping, photography), complaints, inspections, violations, and law enforcement cases. Evaluate programs by establishing a baseline, making adjustments, and reporting successes. Photography is effective for tracking if GIS is not available, and is also useful to persuade people how ugly dumps are. To report successes, advertise heavily in newsletters, fliers, radio, etc. Provide before and after pictures and stress the number of people and groups involved, including who did what for how long. In short, generate voluminous positive press. In dealing with the press, "learn as you go."

Ms. Gavin then summarized where the *Guidebook* suggests that readers look for resources, including within the community (partnerships and coordination) and in EPA's *Grant Resources for Solid Waste Activities in Indian Country*. She noted that the *Guidebook* will soon be available on the EPA web site. She then called for tribal success stories to write up as case studies [i.e., in future revisions/additions to the *Guidebook*].

Question: Why is IHS not listed as a "resource," given that it is mandated to clean up dumps?
Ms. Tong answered that the *Guidebook,* admittedly, is not tailored specifically for tribes, but rather for urban areas with environmental justice problems. Future versions could be tailored for tribes. Region 5 wants to gather relevant resources and write tribal case studies. Surrounding counties, other federal agencies, the Forest Service, and nonprofits are also resources, she said. Also, publicizing successful cleanup efforts might result in partners volunteering to help in future cleanups rather than "having to be begged."

Ms. Tong then thanked participants and closed the session.